



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/998,676	11/29/2001	Eric Wu	NA01-002	7361

28112 7590 10/18/2006

SAILE ACKERMAN LLC  
28 DAVIS AVENUE  
POUGHKEEPSIE, NY 12603

EXAMINER

PHAM, TUAN

ART UNIT PAPER NUMBER

2618

DATE MAILED: 10/18/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/998,676

Applicant(s)

WU ET AL.

Examiner

TUAN A. PHAM

Art Unit

2618

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 01 August 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-27 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1-9 and 15-27 is/are allowed.
- 6) ☒ Claim(s) 10-14 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### *Response to Arguments*

1. Applicant's arguments filed on 08/01/2006 have been fully considered but they are not persuasive.

In response to applicant's remark on page 18, Applicant argues that the examiner has fails to combine Zinn in view of Melanson in claims 10-12, and 14.

In response to applicant's arguments as stated above, the Examiner respectfully disagrees with the Applicant's argument. It appears applicant is attacking individual merits of Zinn and Melanson and concludes that there is no impetus to combine them. However, the 103 rejection is in consideration of Zinn in view of Melanson as a whole. One cannot show non-obviousness by attacking references individually. In re Keller, 208 USPQ 871 (CCPA 1981). The test for obviousness is not whether features of one reference may be bodily incorporated into the other to produce claimed subject matter but simply what the combination of references makes obvious to one of ordinary skill in pertinent art. In re Bozek, (CCPA) 163 USPQ 545. The question in a rejection for obviousness on a combination of references is what secondary reference would teach one skilled in the art and not whether its structure could be bodily substituted in basic reference structure. In re Richman, 165 USPQ 509 (CCPA 1970). In this regard, the intent of Melanson as a secondary teaching is not to combine its structural features into Zinn, but rather to use the teaching of Melanson (i.e., basic pulse width modulation amplifier) to combine with Zinn. Therefore, there is an existing a strong prima facie case of obviousness under 35 U.S.C 103, and proper to combine Zinn and Melanson.

Art Unit: 2618

In response to applicant's remark on pages 17-18, Applicant argues that the Melanson does not teach a reference control ramp signal, and a reference control ramp signal is a triangular shaped signal in claims 10-12, and 14.

In response to applicant's arguments as stated above, the Examiner respectfully disagrees with the Applicant's argument. Melanson does teach a reference control ramp signal (see figure 2, square wave from the crystal oscillator 206). In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., a reference control ramp signal is a triangular shaped signal) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

For the reasons above, the 103 rejections as set forth in the last Office Action stand.

### ***Claim Rejections - 35 USC § 103***

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of

the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

**3. Claims 10-12, and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Zinn (Pub. No.: US 2003/0064684) in view of Melanson (U.S. Patent No.: 7,010,271).**

**Regarding claim 10**, Zinn teaches a wireless audio transmitter system comprising:

an up-converter in communication with the pulse width amplifier (i.e., comparator) to receive the pulse width modulated signal and convert the pulse width modulated signal to a modulated carrier signal (i.e., frequency modulation signal)(see figure 3, transmitter 164 included mixer or up-converter, col.2, [0026]);

a transmitter in communication with the modulated carrier signal to transfer the modulated carrier signal wirelessly (see col.2, [0026]); and

It should be noticed that Zinn fails to teach an input audio signal and a reference control ramp signal to compare said a voltage level of said audio signal with said reference control ramp signal to generate a digital output signal such that a pulse width of said digital output signal is modulated by said audio signal, such that the pulse width is proportional to an amplitude of said voltage level of said audio signal to provide a

Art Unit: 2618

pulse width modulated signal. However, Melanson teaches an input audio signal (see figure 2, audio in) and a reference control ramp signal (read on low frequency clock square wave from oscillator 206) to compare said a voltage level of said audio signal with said reference control ramp signal to generate a digital output signal such that a pulse width of said digital output signal is modulated by said audio signal (see figure 2, the PWM 204 receives the audio in and low frequency clock square wave and compare the two signal and produce the digital pulse width signal, col.3, ln.48-67, col.4, ln.1-15), such that the pulse width is proportional to an amplitude of said voltage level of said audio signal to provide a pulse width modulated signal (see col.4, ln.1-15).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the teaching of Melanson into view of Zinn, in order to reduce heat dissipation and component size minimization in the design as suggested by Melanson at column 1, lines 53-60.

**Regarding claim 11**, after combine Zinn and Melanson that both references will teach the claimed invention. Zinn teaches a triangular wave form (see [0024]) and Melanson teaches comparator having a first input to receive the audio signal and a second input to receive the reference control ramp signal, said reference control ramp signal having a square wave form such that, as said comparator compares the audio signal and reference control ramp signal, the pulse width modulated signal is provided to an output of said comparator (see figure 2, audio in, low clock frequency square wave, PWM 204, col.3, ln.47-67).

**Regarding claim 12**, Zinn further teaches the up-converter comprises a modulation apparatus to combine a carrier frequency with the pulse width modulated signal to form the modulated carrier signal (see figure 3, transmitter 164 comprises a mixer for mixing the pulse width modulated signal with reference frequency which generated by local oscillator, col.2, [0026]).

**Regarding claim 14**, Melanson further teaches the carrier frequency is at least 900 MHz (see col.3, ln.1-10).

**4. Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over Zinn (Pub. No.: US 2003/0064684) in view of Melanson (U.S. Patent No.: 7,010,271) as applied to claim 10 above, and further in view of Shamlou et al. (U.S. Patent No.: 6,690,949, hereinafter, "Shamlou").**

**Regarding claim 13**, Zinn and Melanson, in combination, fails to teach modulation and demodulation apparatus is selected from a group of modulation apparatus consisting quadrature phase shift keying modulation apparatus. However, Shamlou teaches such features (see figure 1, modulator 16, col.4, ln.60-65).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the teaching of Shamlou into view of Zinn and Melanson, in order to alternate modulation scheme for digital transmission in wireless system.

***Allowable Subject Matter***

**5. Claims 1-9, and 15-27 are allowed.**

***Conclusion***

6. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tuan A. Pham whose telephone number is (571) 272-8097. The examiner can normally be reached on Monday through Friday, 8:30 AM-5:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Matthew Anderson can be reached on (571) 272-4177. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR.



Art Unit: 2618

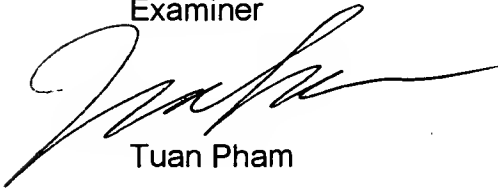
Status information for unpublished applications is available through Private PAIR only.

For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should

you have question on access to the Private PAIR system, contact the Electronic

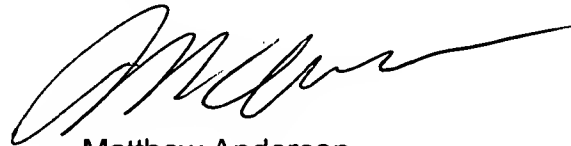
Business Center (EBC) at 866-217-9197 (toll-free).

Art Unit 2618  
October 14, 2006  
Examiner

A handwritten signature in black ink, appearing to read 'Tuan Pham', with a long horizontal flourish extending to the right.

Tuan Pham

Supervisory Patent Examiner  
Technology Center 2600

A handwritten signature in black ink, appearing to read 'Matthew Anderson', with a long horizontal flourish extending to the right.

Matthew Anderson